



January 24, 2005

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Docket Nos: 50-315
50-316

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop O-P1-17
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION -
NUCLEAR REGULATORY COMMISSION BULLETIN 2003-01
REGARDING DEBRIS BLOCKAGE OF
RECIRCULATION SUMP

- Reference:
- 1) Nuclear Regulatory Commission (NRC) Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors," dated June 9, 2003.
 - 2) Letter from A. C. Bakken III, Indiana Michigan Power Company (I&M), to U. S. NRC Document Control Desk, "Response to Nuclear Regulatory Commission Bulletin 2003-01 Regarding Debris Blockage of Recirculation Sump," AEP:NRC:3054-12, dated August 7, 2003 (ML032260668).
 - 3) Letter from C. F. Lyon, NRC, to M. K. Nazar, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 - Request for Additional Information Regarding Response to NRC Bulletin 2003-01 (TAC Nos. MB9579 and MB9571)," dated November 4, 2004 (ML043000052).


A103

This letter provides additional information requested by the U. S. Nuclear Regulatory Commission (NRC) regarding Indiana Michigan Power Company (I&M's) response to an NRC Bulletin concerning the potential for debris blockage of the recirculation sump.

By NRC Bulletin 2003-01 (Reference 1), the NRC informed pressurized water reactor licensees of the potential susceptibility of recirculation sump screens to debris blockage following a high-energy line break in containment. The NRC requested licensees to confirm compliance with applicable regulatory requirements, or describe compensatory measures to reduce the potential risk as evaluations to determine compliance proceed. Reference 2 provided I&M's response to the bulletin and described compensatory measures for the Donald C. Cook Nuclear Plant. By Reference 3, the NRC identified additional information needed to complete its review of the I&M response. As documented in Reference 3, I&M agreed to target submittal of the additional information by January 3, 2005. In telephone discussions on December 2, 2004, and January 18, 2005, I&M informed Mr. C. F. Lyon of the NRC staff that it would provide the additional information by January 24, 2005. Attachment 1 to this letter provides the requested additional information. Attachment 2 identifies the regulatory commitments contained in this letter.

Should you have any questions, please contact Mr. John A. Zwolinski, Safety Assurance Director, at (269) 466-2428.

Sincerely,



Joseph N. Jensen
Site Vice President

JW/rdw

Attachments:


1. Response to U. S. Nuclear Regulatory Commission Request for Additional Information Regarding Bulletin 2003-01
2. Regulatory Commitments

c: J. L. Caldwell, NRC Region III
K. D. Curry, Ft. Wayne AEP, w/o attachments
J. T. King, MPSC
C. F. Lyon, NRC Washington, DC
MDEQ – WHMD/HWRPS
NRC Resident Inspector

AFFIRMATION

I, Joseph N. Jensen, being duly sworn, state that I am Site Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

Indiana Michigan Power Company



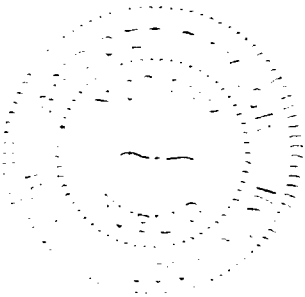
Joseph N. Jensen
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 24th DAY OF January, 2005

Guylot Taylor
Notary Public

My Commission Expires 6/10/2007



RESPONSE TO U. S. NUCLEAR REGULATORY COMMISSION REQUEST FOR
ADDITIONAL INFORMATION REGARDING BULLETIN 2003-01

References for this attachment are identified following the response to Question 3.

By Nuclear Regulatory Commission (NRC) Bulletin 2003-01 (Reference 1), the NRC informed pressurized water reactor licensees of the potential susceptibility of recirculation sump screens to debris blockage following a high-energy line break in containment. The NRC requested licensees to confirm compliance with applicable regulatory requirements, or describe compensatory measures to reduce the potential risk as evaluations to determine compliance proceed. Reference 2 provided Indiana Michigan Power Company's (I&M's) response to the bulletin and described compensatory measures for the Donald C. Cook Nuclear Plant (CNP). By Reference 3, the NRC identified additional information needed to complete its review of the I&M response. This attachment provides the requested additional information.

NRC Question 1

On page 4 of Attachment 1 of your response, you discussed operator training on indications of and responses to sump clogging. However, your response does not completely discuss the operator training to be implemented. Please provide a detailed discussion of the operating procedures to be implemented, the indications of sump clogging that the operators are instructed to monitor, the criteria used to declare a sump clogging condition, and the response actions the operators are instructed to take in the event of sump clogging and loss of ECCS recirculation capability.

I&M Answer to NRC Question 1

The training description referenced in NRC Question 1 above pertained to existing training on pump cavitation, which would be a consequence of significant sump clogging. This training is not specific to clogging of recirculation sump screens. As described below in the portion of the answer to NRC Question 2 regarding WCAP-16204, Revision 1 (Reference 4), Appendix A, Sections A8-W and A9-W, I&M will provide operator guidance on symptoms and identification of containment sump blockage, and will provide contingency operator actions in response to containment sump blockage, loss of suction, and cavitation. As also described below, the actions will be completed no later than September 1, 2005. I&M will also submit the detailed information requested by NRC Question 1 no later than September 1, 2005.

NRC Question 2

On page 9 of Attachment 1 of your response, you state that CNP emergency procedures are based on generic procedures provided by the Westinghouse Owners Group (WOG). You further state that I&M considered certain WOG recommendations in determining if procedural modifications to delay switchover to sump recirculation should be implemented at CNP, and

I&M determined that the procedural modifications were not appropriate. The WOG has developed operational guidance in response to Bulletin 2003-01 for Westinghouse and CE type pressurized water reactors (PWRs). This guidance was issued in March 2004. Please provide a discussion of your plans to consider implementing this new WOG guidance. Include a discussion of the WOG recommended compensatory measures that have been or will be implemented at your plant, and the evaluations or analyses performed to determine which of the WOG recommended changes are acceptable at your plant. Provide technical justification for those WOG recommended compensatory measures not being implemented by your plant. Also include a detailed discussion of the procedures being modified, the operator training being implemented, and your schedule for implementing these compensatory measures.

I&M Answer to NRC Question 2

The WOG guidance referenced in the NRC question is provided in WCAP-16204, Revision 1, (Reference 4). This WCAP revision was issued after I&M had provided its response to NRC Bulletin 2003-01. Appendix A to Volume 1 of the WCAP identifies 11 candidate operator actions (COAs) for potential incorporation into the Emergency Response Guidelines (ERGs) used by Westinghouse plants or the Emergency Procedure Guidelines (EPGs) used by Combustion Engineering (CE) plants. Some of these COAs have multiple variations. CNP Units 1 and 2 are Westinghouse plants. I&M has evaluated each COA potentially applicable to Westinghouse plants, using the guidance contained in Appendix A to the WCAP and CNP-specific information, to determine if the COA is appropriate for implementation as an interim compensatory measure. The results of these evaluations are summarized in the table below. These results are consistent with the conclusions/recommendations described in Appendix A to Volume 1 of the WCAP.

Details regarding the evaluation of each COA, including justifications for COAs not planned for implementation, are provided in the text following the table.

WCAP-16204, Rev. 1 Appendix A Section	COA Title	Evaluation as Interim Compensatory Measure for CNP
A1a-W	Westinghouse Plants - Operator Action to Secure One Spray Pump	The COA described below in "A1a-Ice Addendum" is more directly applicable to CNP.
A1a – Ice Addendum	Westinghouse Ice Condenser Plants Operator Action to Secure One Spray Pump	I&M does not plan to implement this COA for a large break LOCA. Existing emergency procedures implement the COA for a small break LOCA.

WCAP-16204, Rev. 1 Appendix A Section	COA Title	Evaluation as Interim Compensatory Measure for CNP
A1b	Operator Action to Secure Both Spray Pumps	I&M does not plan to implement this COA.
A2	Manually Establish One Train of Containment Sump Recirculation Prior to Automatic Actuation	I&M does not plan to implement this COA.
A3-W	Westinghouse Plants - Terminate One Train of Safety Injection After Recirculation Alignment	I&M does not plan to implement this COA.
A4	Early Termination of One Low Pressure Safety Injection/Residual Heat Removal (RHR) Pump Prior to Recirculation Alignment	The WOG evaluation applies to CE plants. I&M does not plan to implement this COA.
A5	Refill of Refueling Water Storage Tank (RWST)	I&M will implement this COA no later than September 1, 2005. Implementation of refill preparations and actual refill is contingent on acceptable evaluations of operator dose and potential inadvertent injection.
A6	Inject More Than One RWST Volume From Refilled RWST or by Bypassing the RWST	I&M will implement this COA no later than September 1, 2005.
A7	Provide More Aggressive Cooldown And Depressurization Following A Small Break Loss of Coolant Accident (LOCA)	The WOG evaluation applies to CE plants. I&M does not plan any actions to implement this COA.
A8-W	Westinghouse Plants - Provide Guidance on Symptoms And Identification of Containment Sump Blockage	I&M will implement this COA no later than September 1, 2005.
A9-W	Westinghouse Plants – Develop Contingency Actions In Response to Containment Sump Blockage, Loss of Suction, and Cavitation	I&M will implement this COA no later than September 1, 2005.
A10	Early Termination of One Train of High Pressure Safety Injection/High-Head Injection Prior to Recirculation Alignment	The WOG evaluation applies to CE plants. I&M does not plan to implement this COA.

WCAP-16204, Rev. 1 Appendix A Section	COA Title	Evaluation as Interim Compensatory Measure for CNP
A11	Prevent or Delay Containment Spray Actuation for Small Break LOCAs (Less Than 1.0 Inch Diameter) in Ice Condenser Plants	I&M does not plan to implement this COA.

As noted in the preceding table, I&M is committing to implement several COAs by September 1, 2005. I&M's original response (Reference 2) to NRC Bulletin 2003-01 documented several significant measures, not identified in NRC Bulletin 2003-01, that have already been taken to address potential debris blockage of recirculation sump screens at CNP. In response to NRC Generic Letter 2004-02 (Reference 5), I&M is contracting performance of a base analysis of the susceptibility of the CNP recirculation sumps to debris blockage. If the base analysis demonstrates no susceptibility to debris blockage of recirculation sump screens at CNP, then these COAs will not be implemented. The NRC would then be notified in accordance with the CNP commitment management program.

EVALUATION OF CANDIDATE OPERATOR ACTIONS

A1a-W – Westinghouse Plants - Operator Action to Secure One Spray Pump

The COA consists of securing one containment spray pump prior to initiating containment sump recirculation. Since CNP Units 1 and 2 have ice condenser containments, the evaluation described below in "A1a-Ice Addendum" is more directly applicable.

A1a-Ice Addendum - Westinghouse Ice Condenser Plants Operator Action to Secure One Spray Pump

The COA consists of securing one containment spray pump prior to initiating containment sump recirculation. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that, in general, the COA should not be implemented at plants with ice condenser containments. The following reasons were provided:

- "The Westinghouse ice condenser containment plants are especially sensitive to the single failure of the operating spray pump once ice condenser heat removal capability is exhausted. The sensitivity is driven by containment size, lower containment design pressure, and available containment heat removal systems."
- "For a large-break LOCA, preliminary evaluations indicate that the insufficient time would be available for the operator to respond to the loss of the operating containment spray following the exhaustion of heat removal capability by the ice condenser system."

- "For a small-break LOCA, preliminary evaluations indicate sufficient time would be available for the operator to respond to the loss of the operating spray pump. This condition, however, drives the applicability of this COA to only small-break LOCA, events that are not as challenging from the perspective of debris generation, transport, and differential pressure."

Additionally, the introduction to Volume 1 of the WCAP identifies an issue that must be addressed in evaluating the appropriateness of any COA that involves securing a containment spray or emergency core cooling system (ECCS) pump. The issue is that licensees..."must continue to assume a single failure of the operating pump after the manual securing of a redundant pump. The probability is high that the secured pump will restart, since it was running when shut down, but there will be a time when neither pump is running. Most current licensing bases assume at least one pump running continuously."

Implementation of this COA for a large break LOCA at CNP would require revision of the associated accident analyses to demonstrate that the containment pressure would remain within the design basis limit of 12 psig, assuming a single failure of the only operating spray pump. The revised analyses would have to account for the containment pressure increase that would occur during the time needed for operators to recognize an abnormal trend, correctly diagnose the cause, and initiate operation of the remaining pump. The current analyses indicate that the limiting containment pressure would be within 0.12 psig of the design basis limit. Therefore, it appears unlikely that sufficient analytical margin exists to compensate for the containment pressure increase that would occur during the operator response to failure of the single operating spray pump during a large break LOCA. Implementation of this COA would also require revision of the CNP analyses for large break LOCA dose consequences to account for an interruption in spray flow, since these analyses rely on the containment spray system for iodine removal. There is no assurance that such a revision would show that the dose consequences would be acceptable. The revised containment integrity and dose analyses would potentially require license basis changes to credit operator action in response to the single failure of the only operating spray pump.

Existing CNP emergency procedures for small break LOCAs direct operators to secure containment spray pumps if containment pressure is less than a specified value, which is well below the containment design limit. Therefore, consistent with the recommendation stated in the WCAP, I&M does not plan to implement this COA for a large break LOCA, and existing emergency procedures implement the COA for a small break LOCA.

A1b – Operator Action to Secure Both Spray Pumps

The COA consists of securing all containment spray prior to initiating containment sump recirculation. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that the COA be implemented at plants with containment fan coolers (ventilation units) capable of removing 100 percent of decay heat loads, and that do not credit containment spray for iodine removal or pH control. The CNP containment coolers are not designed for operation following a LOCA. The CNP analyses for offsite and control room dose consequences from a large break LOCA rely on the containment spray system for iodine removal and pH control. Therefore, consistent with the recommendation stated in the WCAP, I&M does not plan to implement this COA.

A2 – Manually Establish One Train of Containment Sump Recirculation Prior to Automatic Actuation

The COA consists of manually transferring the suction of one safety injection train to the containment sump prior to automatic actuation. Since the CNP design does not include automatic recirculation actuation, this COA is considered to consist of manually transferring the suction of one ECCS train to the containment sump prior to manual initiation of recirculation. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that each plant consider the advantages and disadvantages of this COA as applied to the plant specific design.

The design of the CNP ECCS precludes implementation of this COA. The two charging pumps share a common suction header. This suction header provides a flow path from either the RWST during the injection phase, or the containment sump via the RHR pump discharge during the recirculation phase. The RHR pump discharge pressure is much higher than the RWST static head pressure. Aligning both the RWST and the RHR discharge to the charging pump suction header concurrently would result in the RHR pump supplying water to both charging pumps, and no RWST water would be supplied to either charging pump. Since the two safety injection (SI) pumps also share a common suction header that can be aligned to either the RWST or the RHR pump discharge, the same condition would occur if the SI pump suction header was aligned to both sources, i.e., the RHR pump would supply water to both SI pumps, and no RWST water would be supplied to either SI pump.

This COA is also precluded by the design of the SI pump minimum flow (miniflow) protection. The SI pumps share a common miniflow line that returns water to the RWST. The SI pump miniflow line from each pump cannot be isolated from the opposite pump using remotely operated valves. During a small break LOCA, the reactor coolant system (RCS) pressure may remain near or above the SI pump discharge pressure. If the miniflow isolation valves were open while the SI pump suction was aligned to the recirculation sump, water from the sump would flow to the RWST, bypassing the containment fission product barrier. If the miniflow isolation valves were closed, the necessary SI pump minimum flow requirements may not be met, resulting in pump damage.

Therefore, consistent with the recommendation stated in the WCAP, I&M has considered the advantages and disadvantages as applied to the plant specific design as described above and does not plan to implement this COA.

A3-W – Westinghouse Plants - Terminate One Train of Safety Injection After Recirculation Alignment

The COA consists of terminating one train of safety injection (i.e., ECCS) following containment sump recirculation alignment, assuming two trains of safety injection are in operation after initiation of recirculation and are running normally. For CNP, one train of ECCS would include the RHR pump, SI pump, and charging pump in a given train. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that each plant consider the advantages and disadvantages of the COA as applied to the plant specific design. Accordingly, I&M has considered the potential impact of this COA on CNP accident analyses.

Implementation of this COA would require revision of the CNP post-LOCA subcriticality and long term core cooling analyses to account for the time needed for operators to recognize loss of the single operating ECCS train and initiate operation of the remaining ECCS train. Following loss of the single operating train, there would be no ECCS flow until the remaining operable pump was manually restarted. The effect of this flow interruption on core cooling and core reactivity would have to be determined. There is no assurance that the revised analyses would produce acceptable results. The revised analyses would potentially require license basis changes to credit operator action in response to the single failure.

As documented in WCAP-16204, Revision 1, Appendix B, the single failure scenario was analyzed using the RELAP5 computer code and modeling a plant with an initial power level of 2700 megawatts thermal. The analysis showed that a single failure of the one operating ECCS train upon initiation of recirculation could produce an unacceptable rapid increase in cladding temperature. An analysis specific to CNP would have to be based on the more limiting Unit 2 licensed power level of 3468 megawatts thermal.

Therefore, consistent with the recommendation stated in the WCAP, I&M has considered the advantages and disadvantages and does not plan to implement this COA.

A4 – Early Termination of One Low Pressure Safety Injection/ RHR Pump Prior to Recirculation Alignment

The COA consists of securing one low pressure safety injection/RHR pump prior to recirculation alignment. WCAP-16204, Revision 1 states that the WOG evaluation of this COA applies to CE plants only. Therefore, I&M does not plan to implement this COA.

A5 - Refill of RWST

The COA consists of preemptive preparations to refill the RWST, lineup an alternate makeup source that bypasses the RWST, initiate RWST refill after switchover to sump recirculation, or initiating RWST refill before switchover to sump recirculation. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that emergency procedures be changed to initiate early action to line up to refill the RWST or bypass the RWST to support using an alternate makeup source, if needed. Actual RWST refill was generally not recommended until after switchover to recirculation has occurred.

Consistent with the recommendation stated in WCAP-16204, I&M will revise emergency operating procedures to include actions to align valves to refill the RWST or lineup an alternate makeup source that bypasses the RWST. Implementation of this COA is contingent upon determination that post accident dose levels allow personnel access for manual valve operation. Additionally, implementation of actual refill may not occur unless further evaluation indicates that RWST elevated levels will not impact assumed accident conditions due to inadvertent injection (e.g. boundary valve leakage). As described in the WCAP, I&M plans to add these actions, if determined to be appropriate, in the latter portion of procedure ES-1.3, "Transfer to Cold Leg Recirculation." The required emergency operating procedure revisions will be completed no later than September 1, 2005. Additionally, the detailed discussion of procedure modifications and operator training requested by NRC Question 2 will be submitted to the NRC no later than September 1, 2005.

A6 – Inject More Than One RWST Volume From Refilled RWST or by Bypassing the RWST

The COA consists of measures to re-initiate RCS injection if screen blockage causes loss of sump recirculation capability. The COA provides injection water from a refilled RWST or from an alternate source, bypassing the RWST. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that a loss of recirculation capability due to sump blockage would be a beyond-design-basis condition. As also documented in the WCAP, the COA may have implications regarding RCS pressurization, hydrogen generation, reactivity control, thermal shock, pH control, and flooding of important instrumentation. Therefore, the WOG recommended that the actions be coordinated by emergency organization technical support personnel in accordance with severe accident management guidelines.

One of the above identified potential effects of the COA is of specific concern to CNP due to the relatively small volume of the ice condenser containment. The injection of additional water into the CNP containment and RCS, beyond that normally injected from a single RWST, could impair instrumentation (core exit thermocouples) used in accident mitigation. Existing containment flood calculations indicate that the currently available flooding margin is small (less than one inch for Unit 2). Therefore, operators would not inject the additional water unless the specific conditions justified allowing the instrumentation to become inoperable.

Since operators would implement this COA only if beyond-design-basis conditions of sump blockage were to occur, this COA will be included in the procedural guidance developed to address containment sump blockage as described in A9-W below.

A7 - Provide More Aggressive Cooldown And Depressurization Following A Small Break LOCA

The COA consists of providing guidance in the CE EPGs to implement the desired strategy following a small break LOCA. WCAP-16204, Revision 1 states that the evaluation applies only to CE EPGs, not Westinghouse ERGs. The current CNP emergency procedures follow the Westinghouse ERGs. Therefore, I&M does not plan any actions to implement this COA.

A8-W - Westinghouse Plants - Provide Guidance on Symptoms And Identification of Containment Sump Blockage

The COA consists of providing procedural guidance and training to identify symptoms of containment sump blockage or degraded ECCS pump performance, utilizing all available instrumentation. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that, in general the proposed change is advantageous to most plants.

Consistent with the recommendation stated in the WCAP, I&M will provide procedural guidance and training to identify symptoms of containment sump blockage or degraded ECCS pump performance, utilizing all available instrumentation. The procedural guidance and training will be provided no later than September 1, 2005. Additionally, the detailed discussion of procedure modifications and operator training requested by NRC Question 2 will be submitted to the NRC no later than September 1, 2005.

A9-W - Westinghouse Plants – Develop Contingency Actions In Response to Containment Sump Blockage, Loss of Suction, and Cavitation

The COA consists of providing procedural guidance and training on responses to sump clogging. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that guidance be developed outside the ERG system, since this enables implementation of interim guidance with minimum long-term changes to the ERG system.

Consistent with the recommendation stated in the WCAP, I&M will provide procedural guidance and training on responses to sump clogging outside the ERG system. The procedural guidance and training will be provided no later than September 1, 2005. Additionally, the detailed discussion of procedure modifications and operator training requested by NRC Question 2 will be submitted to the NRC no later than September 1, 2005.

A10 - Early Termination of One Train of High Pressure Safety Injection/High-Head Injection Prior to Recirculation Alignment

The COA consists of termination of high pressure safety injection prior to containment sump recirculation alignment. WCAP-16204, Revision 1 states that the COA evaluation applies to CE plants only. Therefore, I&M does not plan to implement this COA.

A11 - Prevent or Delay Containment Spray Actuation for Small Break LOCAs (Less Than 1.0 Inch Diameter) in Ice Condenser Plants

The COA consists of preventing or delaying automatic actuation of containment spray for ice condenser plants. WCAP-16204, Revision 1 documents the WOG conclusion/recommendation that the COA not be incorporated into the ERGs and that no further generic work be performed. The WOG also concluded that licensees may determine, based upon the potential for debris related concerns, as well as enhancing the ice condenser plant's response to smaller break LOCAs, that it is advisable to implement logic changes to prevent automatic initiation of containment spray until ice melt. However, in-depth plant-specific analysis and licensing reviews would be required.

Initiation of containment spray actuation during a small break LOCA could be delayed by either increasing the automatic actuation setpoint or providing instruction to operators to manually prevent actuation of spray. For CNP, increasing the setpoint for containment spray automatic actuation to delay actuation during a small break LOCA would also affect the plant response to a large break LOCA. Therefore, certain large break LOCA analyses, such as those involving containment pressure, recirculation sump pH, and containment iodine removal, would have to be revised. As described in Section A1a-Ice Addendum above, the current analyses indicate that the limiting containment pressure would be within 0.12 psig of the 12 psig design basis limit. Therefore, it appears unlikely that sufficient analytical margin exists to compensate for the containment pressure increase that would result from delaying containment spray actuation. Additionally, there is no assurance that a revision to iodine removal analyses would show that the dose consequences would be acceptable.

For CNP, manual operator intervention to prevent containment spray during a small break LOCA would have to be taken early in the event, since the CNP spray actuation setpoints are low (less than or equal to 3 psig). Existing CNP emergency procedures for small break LOCAs direct operators to secure containment spray pumps if containment pressure is less than a specified value well below the design limit. I&M considers that preventing containment spray actuation without ascertaining that spray is not needed for accident mitigation would be inappropriate.

Consistent with the recommendation stated in the WCAP, I&M has considered the effect of this COA on plant specific analyses. I&M does not plan to implement this COA.

NRC Question 3

NRC Bulletin 2003-01 provides possible interim compensatory measures licensees could consider to reduce risks associated with sump clogging. In addition to those compensatory measures listed in Bulletin 2003-01, licensees may also consider implementing unique or plant-specific compensatory measures, as applicable. On pages 1 through 3 of Attachment 1 to your Bulletin 2003-01 response you list a number of "plant specific measures that are not identified in this Bulletin." Please discuss any other possible unique or plant-specific compensatory measures you considered for implementation at your plant. Include a basis for rejecting any of these additional considered measures.

I&M Answer to NRC Question 3

As described on Page 2 of the attachment to the I&M response (Reference 2) to Bulletin 2003-01 (Reference 1), I&M had a plant-specific containment debris generation and transport study performed in 1997. The study was based on methodologies adapted from efforts to resolve ECCS pump suction strainer blockage issues at boiling water reactors (BWRs). The study consisted of an early application of the BWR methodology to a PWR configuration. Accordingly, I&M considered having the study updated subsequent to submittal of the Bulletin 2003-01 response. However, I&M elected to defer performance of an updated study until consensus was achieved between industry representatives and the NRC staff regarding the assumptions and methodologies to be used for such studies. I&M intends to address performance of a new study in its response to NRC Generic Letter 2004-02 (Reference 5), regarding the potential impact of debris blockage on emergency recirculation during design basis accidents at PWRs.

References for this Attachment

1. NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors," dated June 9, 2003.
2. Letter from A. C. Bakken III, I&M, to U. S. NRC Document Control Desk, "Response to Nuclear Regulatory Commission Bulletin 2003-01 Regarding Debris Blockage of Recirculation Sump," AEP:NRC:3054-12, dated August 7, 2003 (ML032260668).
3. Letter from C. F. Lyon, NRC, to M. K. Nazar, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Request for Additional Information Regarding Response to Nuclear Regulatory Commission (NRC) Bulletin 2003-01 (TAC Nos. MB9579 and MB9571)," dated November 4, 2004 (ML043000052).
4. WCAP-16204, Revision 1, "Evaluation of Potential ERG and EPG Changes to Address NRC Bulletin 2003-01 Recommendations," dated March 2004.

5. NRC Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors," dated September 13, 2004.

Attachment 2 to AEP:NRC:5054-01

REGULATORY COMMITMENTS

The following table identifies those actions committed to by Indiana Michigan Power Company (I&M) in this document. Any other actions discussed in this submittal represent intended or planned actions by I&M. They are described to the Nuclear Regulatory Commission (NRC) for the NRC's information and are not regulatory commitments.

Commitment	Date
I&M will submit the information requested by NRC Question 1.	No later than September 1, 2005.
I&M will implement the candidate operator actions (COAs) identified in Sections A5, A6, A8-W, and A9-W, of Appendix A to WCAP-16204, Revision 1, as described in Attachment 1 to this letter.	No later than September 1, 2005.
The detailed discussion of procedure modifications and operator training regarding the COAs identified in Sections A5, A6, A8-W, and A9-W, of Appendix A to WCAP-16204, Revision 1 will be submitted to the NRC as requested by NRC Question 2.	No later than September 1, 2005.